

# PREDPOL



TACOMA POLICE DEPARTMENT

## WHAT IS PREDICTIVE POLICING?

- No standard definition
- Paradigm of prevention and efficiency
- Similar to weather forecasting
  - Both long-term and short-term forecasts
- Not Minority Report!

### What is Predictive Policing?

- Relatively new – no standard definition but at it's most basic level is using data and analysis to identify future potential areas or targets.
- Predictive Policing is actually a paradigm shift focused on prevention rather than reaction.
- It is not a crystal ball or minority report, there are stronger parallels to weather forecasting.
  - Different types of weather forecasting focuses:
    - *long term forecast – mild winter*
    - *short term forecast – rain expected this evening.*
  - PredPol is not the only "Predictive Policing software" but it's the best for short term and deploying officers in real time.

## WHY IS IT BENEFICIAL?

- Prevention is cheaper than investigation
- Planning and resource allocation
- More focused response effective and efficient, can do more with less

### **SAVES MONEY**

Focusing on prevention is cheaper than investigation  
(far less time consuming on the resources of the department)

It provides a greater focus; allowing for a more effective response  
Which increases efficiency by doing more with less

Bottom Line is it saves money;  
And helps with the financial accountability of service delivery

## PREDPOL IS ...

- software technology that predicts the time and place of future crimes
- high level mathematics combined with experienced crime analysts and veteran police using their own knowledge and experience
- more than “rear view mirror” policing that simply maps past crime

## THE SCIENCE

repeat victimization



near-repeats

local search

offender behavior



$$\frac{\partial B}{\partial t} = \frac{\eta D}{4} \nabla^2 B - \omega B + \theta \omega \delta$$

mathematical model

PredPol looks forward and projects where and when crime will most likely occur with a seismology algorithm used for predicting earthquakes and their aftershocks.

The algorithm models evidenced based research of offender behavior, so knowing where and when past crime has occurred, PredPol generates probabilities of where and when future crime will occur.

## PREDPOL vs HOTSPOTS



- PredPol is 2x more accurate than hotspots
- More focused areas
- Fewer resources needed to address areas

**PredPol is an analytical improvement,  
not proactive police work**

Hot Spot policing has been around; it's a method for targeting where crime has occurred.

It's what Tacoma was doing before PredPol.

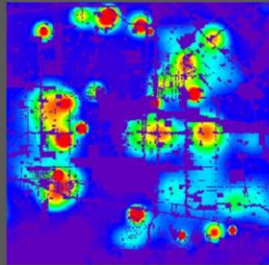
UCLA & LAPD study found that PredPol was twice as accurate as hotspots.

It produces more focused and concise areas.

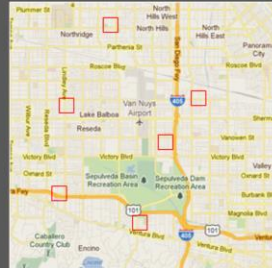
It is also in real-time, where as there was a lag when the hot spot maps were created.

Reiterate that it is an analytical improvement, it is not proactive police work.

## MAKING PREDICTIVE POLICING PRACTICAL



tactical ambiguity

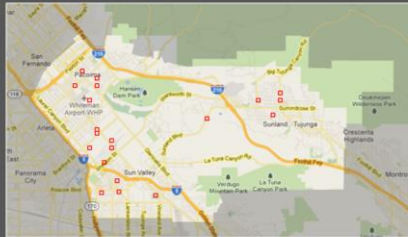


tactical clarity

Besides being more accurate and timely, the user interface provides clarity of where officers should go. Requires no interpretation.

## DEPLOYMENT TO OFFICERS

- lists or maps of predictions in 500' x 500' boxes
- distributed at start of shift or on-demand
- 'get in the box' to disrupt crime during patrols



LAPD Deployment



Santa Cruz PD Deployment

Officers in the field get lists or maps of the predictions in 500ft by 500ft

Supervisors can distribute at the start of shift or can pull up on the web through a computer or smart phone

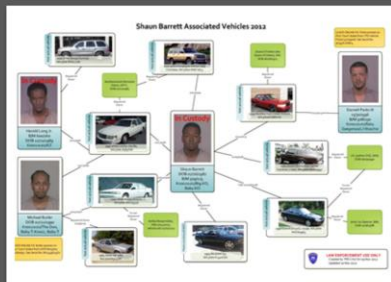
Goal is to get into the box to disrupt crime during patrol by interrupting a crime or discouraging criminal activity.

Not mean to replace officer experience and knowledge but to empower them

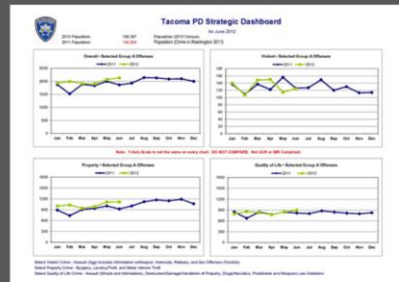


## COMPLEMENTS ANALYST WORK

Analysts provide information of active offenders in area



Reports and analytical products can drive PredPol priorities



PredPol also complements your analysts work:

- It gives you the “where” and “when”, the analysts and detectives provide information on the “who”
- Analyst reports and dashboards can drive PredPol priorities of what crimes to target

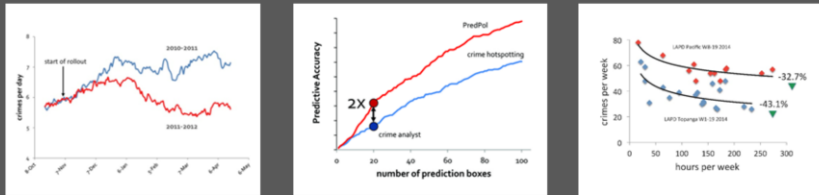
Click Play for video. External browser window will open up the YouTube video.



Link to video: <http://youtu.be/pkGhPSoH7Xk>

CBS segment on PredPol in L.A.

## LAPD RESULTS



LAPD has seen some great results in terms of crime reduction

Their results are often cited because they have done a thorough job in measuring PrePol effectiveness, using control trials and partnering with major universities to ensure scientific accuracy

(received multi-million dollar grant so this was necessary)

- TPD deployment phased-roll out, with focus on officer training vs. stats and measurements.
- Due to the phased roll-out, we can't conclusively distinguish between crime reductions and seasonal fluctuations.
- Sent our data to the universities partnered with PredPol and they confirmed we need a longer amount of time to draw any valid statistical conclusions like LAPD
- Have had numerous arrests by officers in PredPol boxes and several instances of the offender being caught red-handed.

## WHO IS USING PREDPOL?

- Los Angeles, CA
- Santa Cruz, CA
- Atlanta, GA
- Lansing, MI
- San Francisco, CA
- Elgin, IL
- Columbia, SC
- San Jose, CA
- Palo Alto, CA
- Little Rock, AK
- Milwaukee, IW
- Kent, England
- Reading, PA
- Mountain View, CA
- Milpitas, CA
- Los Gatos, CA
- Fairfield, CA
- And many more...



DEMO



## PREDICTIVE POLICING

- **is NOT:**
  - a replacement for knowledge, skills & experience
  - profiling of individuals
  - probable cause
  - new hardware or new hires
- **IS:**
  - assigning probabilities of crime in space and time
  - focal points for effective use of police resources
  - use of existing crime data

Recap